

Date: Wed, 27 Oct 93 04:30:14 PDT  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V93 #91  
To: Ham-Ant

Ham-Ant Digest                    Wed, 27 Oct 93                    Volume 93 : Issue 91

Today's Topics:

Bunk-Bed antenna  
Butternut Butterfly  
Dual band twinlead J-pole?  
j-pole question  
Larsen 2M 5/8 mobile (2 msgs)  
Proper J-Pole Grounding (2 msgs)  
Towers and wind loads  
What's this cable? (2 msgs)

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>

Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>

Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Tue, 26 Oct 1993 12:22:37 EDT  
From: agate!usenet.ins.cwru.edu!news.ecn.bgu.edu!psuvax1!psuvml!sjp117@ames.arpa  
Subject: Bunk-Bed antenna  
To: ham-ant@ucsd.edu

Well it appears that the majority of you actually do think I should  
try it. A few comments...

The reasoning behind the plywood was it's durability and ease of  
breakdown. My roommate did not care for my previous brainstorms  
which involved multiple guy wires and became a deathtrap when the  
lights were off.

In regards to the ARRL Books: I have them, they are great, unfortunately  
my experience with antennas shows that theory and fact aren't always

on the same wavelength.(No pun intended)I have done many of the books projects with minimal success in achieving my desired goals. Just thought something a little weird might work.

Most importantly, thanks for your input and patience. I work in law enforcement not electrical engineering. There are certain NETS where one wouldn't dream of posting such a bizarre idea, for fear of being the object of NET ridicule. Thanks again, I intend to post results.

Steven Pellegrino  
646 E. College Ave Apt. 603  
State College, PA. 16801  
(814) 867-0223

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Date: Tue, 26 Oct 1993 14:59:28 GMT  
From: agate!usenet.ins.cwru.edu!lerc.nasa.gov!magnus.acs.ohio-state.edu!csn!  
joelf@ames.arpa  
Subject: Butternut Butterfly  
To: ham-ant@ucsd.edu

Any feed back on the Butternut Butterfly beam. I am considering that as a better option to the Dipole and Vertical for the 14 - 30 Mhz Bands.

Thank You  
Joel -- KGOIL (was N0QLS)

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Date: Mon, 25 Oct 1993 17:35:00 GMT  
From: swrindle!cs.utexas.edu!sdd.hp.com!nigel.msen.com!caen!destroyer!  
nntp.cs.ubc.ca!unixg.ubc.ca!acs.ucalgary.ca!cpsc.ucalgary.ca!ajfcal!  
1haven.UUmh.Ab.Ca!dreamer@network.ucsd.edu  
Subject: Dual band twinlead J-pole?  
To: ham-ant@ucsd.edu

In article <CF97GI.7qr@wang.com>, Dave Jenkins writes:

> Recently someone posted something about a copper cactus dualband jpole that  
> had a second matching section up near the top. It looked something like this:  
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> does it follow that one could do a similar thing with the twinlead version:  
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> | |<--Feed point  
> | -|  
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> Also, what, if anything, does it mean that my 2M twin lead J-pole already  
> matches almost as well on 440 at it does on 2M?  
>  
Close...for that design the 440 is fed into the top J pole...and 2m into the  
bottom J pole.

The 3rd harmonic? of 2m is in the 440 band. So an antenna resonant at 145 may also happen to be resonant at 435.

--  
"Just a Crazy Engineer with an Amiga and an HP48sx" - The Dreamer  
Email: dreamer@lhaven.uumh.ab.ca or "Lawrence Chen" @ 1:134/3002  
PHONE: +1 403 526 6019 FAX: +1 403 529 5102 CIS: 74200,2431  
Lunatic Haven BBS: +1 403 526 6957 | Packet: @VE6FRM.#HAT.AB.CAN.NA  
Praxis Society K12 BBS: +1 403 529 1610 | Callsign: VE6LKC

Date: Mon, 25 Oct 1993 17:33:08 GMT  
From: swrinde!cs.utexas.edu!sdd.hp.com!nigel.msen.com!caen!destroyer!

nntp.cs.ubc.ca!unixg.ubc.ca!acs.ucalgary.ca!cpsc.ucalgary.ca!ajfcal!  
lhaven.UUmh.Ab.Ca!dreamer@network.ucsd.edu  
Subject: j-pole question  
To: ham-ant@ucsd.edu

In article <751246147.AA04203@blkcat.UUCP>, Gary Donnelly writes:

> I am looking for a basic question relative to a j-pole. The  
> plans that I have call for using a 300 ohm twin lead and  
> connect it to RG58. Isn't this going to be an impedance  
> mismatch?  
>

The bottom J is a quarter wave impedance matching section....that's why  
you move the feed point up and down to tune the antenna.

--  
"Just a Crazy Engineer with an Amiga and an HP48sx" - The Dreamer  
Email: dreamer@lhaven.uumh.ab.ca or "Lawrence Chen" @ 1:134/3002  
PHONE: +1 403 526 6019 FAX: +1 403 529 5102 CIS: 74200,2431  
Lunatic Haven BBS: +1 403 526 6957 | Packet: @VE6FRM.#HAT.AB.CAN.NA  
Praxis Society K12 BBS: +1 403 529 1610 | Callsign: VE6LKC

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Date: 26 Oct 1993 08:31:05 GMT  
From: agate!howland.reston.ans.net!vixen.cso.uiuc.edu!moe.ksu.ksu.edu!  
crcnis1.unl.edu!unlinfo.unl.edu!mcduffle@ames.arpa  
Subject: Larsen 2M 5/8 mobile  
To: ham-ant@ucsd.edu

Be careful about "sanding off the rust". Remember, part of what makes  
a Kulrod Kul is the plating that you could take off in the process.  
Polish it up a little, but don't cut through the surface.

73,  
Gary McDuffie, Sr. // ---o-----./.----o---  
Scottsbluff, Nebraska \\ // ag0n@unl.edu ---o---/|\----o---  
AGON@AGON.#WNE.NE.USA.NA \X/ -----|

-----  
Date: 26 Oct 93 17:01:36 GMT  
From: ogicse!emory!kd4nc!ke4zv!gary@network.ucsd.edu  
Subject: Larsen 2M 5/8 mobile  
To: ham-ant@ucsd.edu

In article <dcameron.751568644@unixg.ubc.ca> dcameron@unixg.ubc.ca (David Cameron)

writes:

>Hello there, I just have some questions about some 2M mobile antennas.  
>I just aquired an NLA-150 (I think) which was very rusted on the whip.  
>I was wondering how many people out there use this type of antenna.

This is an \*industry standard\* antenna in the commercial two way business.  
It's also very commonly used by amateurs. It can offer excellent performance.

> This antenna looks like it has never been cut before for matching.  
>I think it was used for some commercial company which ran on 143 MHz. Will  
>this antenna work on an FT-530? That is the radio I am going to buy this  
>weekend. I just wanted to know if anyone has tried to match one of these  
>puppie.  
>  
> 1) How good can you get the match from 144-148.

You can achieve a near perfect match at the FM band center, 146.5 MHz,  
and no worse than 1.2:1 at the upper and lower repeater band segment  
limits. It'll rise to near 2:1 at 144, but you normally won't care.

> 2) Can you use this antenna for base applications?

Yes. It's not the best choice, but if you mount it on a conductive  
surface that simulates a car top, it will work well.

> 3) Is the black based Kulrod T antennas any better?

No.

> 4) Will sanding off the corrosion on the anntenna effect the  
> performance in a negative fashion? (i.e. should I buy a new whip)

The whip is spring steel with a copper plate followed by a thin nickel  
plate on top of that. Don't sand it or you'll cut through the copper  
plating. That's the main source of conductivity for the whip. Try some  
chrome polish and a bit of elbow grease on it instead. If you can't shine  
it up to your satisfaction, buy a new whip, they're cheap.

Gary

--

Gary Coffman KE4ZV | "If 10% is good enough | gatech!wa4mei!ke4zv!gary  
Destructive Testing Systems | for Jesus, it's good | uunet!rsiatl!ke4zv!gary  
534 Shannon Way | enough for Uncle Sam." | emory!kd4nc!ke4zv!gary  
Lawrenceville, GA 30244 | -Ray Stevens |

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Date: Mon, 25 Oct 1993 20:45:28 GMT

From: elroy.jpl.nasa.gov!sdd.hp.com!col.hp.com!news.dtc.hp.com!hplextra!hpcc05!  
hpcc01!trapps@ames.arpa  
Subject: Proper J-Pole Grounding  
To: ham-ant@ucsd.edu

I am sorry is this is covered in a FAQ, but how do you achieve a single point grounding system if the ham station is 40 feet from the fusebox?

It seems the utility company wants a ground at the service entrance, my ham station for RF reasons wants a short led to the ground near my rig, the antenna wants the shortest, straightest shot to ground from its location. I have linked the two ground rods with #6 wire underground to avoid safety 60 Hz problems, but short of a wide Copper bus around the house or ham shack at the fuse box, there seems no perfect solution. By the way, my 8' rig ground rod has a fan out of several 20' 14 ga. wires to help at RF.

I don't worry too much since the SF Bay area has about 1 thunderstorm/year, but would appreciate any opinions.

Steve Trapp, N4DG

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Date: 26 Oct 93 16:47:56 GMT  
From: ogicse!emory!kd4nc!ke4zv!gary@network.ucsd.edu  
Subject: Proper J-Pole Grounding  
To: ham-ant@ucsd.edu

In article <58440005@hpcc01.corp.hp.com> trapps@hpcc01.corp.hp.com (Stephen M Trapp) writes:

>I am sorry is this is covered in a FAQ, but how do you achieve a single point grounding system if the ham station is 40 feet from the fusebox?  
>  
>It seems the utility company wants a ground at the service entrance, my ham station for RF reasons wants a short led to the ground near my rig, the antenna wants the shortest, straightest shot to ground from its location.  
>I have linked the two ground rods with #6 wire underground to avoid safety 60 Hz problems, but short of a wide Copper bus around the house or ham shack at the fuse box, there seems no perfect solution. By the way, my 8' rig ground rod has a fan out of several 20' 14 ga. wires to help at RF.

Ok this is a common point of confusion so I'll try to address it here. The NEC mandates a ground connection at the service entrance. The phone company will also have a ground at their service entrance. Our tower base is buried in the ground, and may even have a radial system under it. These ground connections will all often be some distance from our amateur station. So this seems to conflict with the requirement for a single point ground, but not really. What we're trying to accomplish

is to make sure that all the cables running in and out of our station are referenced to the same potential at a common entrance point to the station.

We do this by establishing what is called a \*ground window\*. Another term for this used in the commercial arena is the \*entrance bulkhead\*. \*Every\* wire that enters or leaves the station passes through this window, and \*every\* wire is connected to it, either directly in the case of nominally "grounded" conductors, or through an appropriate suppressor network in the case of "live" conductors. This means power, phone, coax, control cabling, \*everything\*. This window is then connected to Earth through the lowest inductance connection we can make. What we've done is to create a single reference point for our station, a single point "ground". As far as our station is concerned, any other grounds that may exist downstream of the single point connection have been effectively "shorted out" by the single point connection.

What we're trying to achieve is \*equal potential\* on all the cables leading to and from our equipment. Current can't flow between two points of equal potential. For equipment protection purposes, it isn't germane exactly \*what\* that common potential is. We don't care if it floats to thousands of volts above Earth potential during a strike as long as the \*difference\* in potential between our various pieces of equipment remains within tolerance. For personal safety reasons, and RF performance reasons, we want the Earth connection to be as good as possible, but we could actually not connect the ground window to Earth at all and still protect our equipment from damaging currents caused by lightning.

Gary

--

Gary Coffman KE4ZV | "If 10% is good enough | gatech!wa4mei!ke4zv!gary  
Destructive Testing Systems | for Jesus, it's good | uunet!rsiatl!ke4zv!gary  
534 Shannon Way | enough for Uncle Sam." | emory!kd4nc!ke4zv!gary  
Lawrenceville, GA 30244 | -Ray Stevens |

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Date: Tue, 26 Oct 1993 04:58:46 GMT  
From: dog.ee.lbl.gov!newshub.nosc.mil!news!price@network.ucsd.edu  
Subject: Towers and wind loads  
To: ham-ant@ucsd.edu

Hi gang, I'm about ready to bite the bullet and buy a tower with a couple of decent antennae. At the moment I have a TH-3 on a TV mast on the garage at 35 feet or so. Works well for what it is, but condx aren't what they were a couple of years ago!

My default plan has been to put up something like a TX-455 (a free-standing 55' crankup) tower with a TH-7 and a 2-el. 40 meter beam on it. I look in the spec sheets and I see the TX-455 is rated at 18 sq ft, and the TH-7 plus a "shorty forty" are about 15 to 16 sq ft. Should be OK, I sez.

Well, a local guy sez, No Way will that tower handle that load. And he also sez I can't put a big enough rotator into a TX-455 to turn it. He suggests a TailTwister which, in fact, won't fit in that tower.

All I want is a 6-el tri-bander, a 2-el. 40, and a WARC rotary dipole. How much free-standing crankup do I really need?

Converse question: how much can I put on a TX-455 and not have it fall over in the first wind gust?

Experienced opinions welcome. Tnx/73--Jim, K6ZH

e-mail: price@nosc.mil

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Date: 26 Oct 1993 13:03:47 GMT  
From: olivea!inews.intel.com!ilx018-bb.intel.com!ilx049!dbraun@uunet.uu.net  
Subject: What's this cable?  
To: ham-ant@ucsd.edu

Scrounging in the dump behind the local cable TV company, I found a chunk of coax. It's labeled only "T-10" (or maybe T-12 if my memory is failing...). It's a bit bigger than RG-8, and has a shield consisting of two layers of aluminum braid and two layers of aluminum foil. From the outside in, they go: braid-foil-braid-foil-dielectric-center. The dielectric is foam.

This stuff looks like if might have really low loss for UHF. Does anyone know if this is a standard cable type? It is 75 ohms? Are connectors available? Perhaps regular N connectors for RG-8 might fit it? If I knew anyone who worked at the cable company, I would ask them.

--

---

Doug Braun      Intel Israel, Ltd.      M/S: IDC1-41  
                  Tel: 011-972-4-655069      dbraun@inside.intel.com

---

Date: 26 Oct 1993 22:54:15 GMT  
From: sdd.hp.com!cs.utexas.edu!swrinde!emory!europa.eng.gtefsd.com!  
howland.reston.ans.net!wupost!crcnis1.unl.edu!unlinfo.unl.edu!  
mcduffle@network.ucsd.edu  
Subject: What's this cable?  
To: ham-ant@ucsd.edu

dbraun@ilx049.intel.com (Doug Braun) writes:

>Scrounging in the dump behind the local cable TV company,  
>I found a chunk of coax. It's labeled only "T-10" (or maybe T-12  
>if my memory is failing...). It's a bit bigger than RG-8, and  
>has a shield consisting of two layers of aluminum braid and  
>two layers of aluminum foil. From the outside in, they go:  
>braid-foil-braid-foil-dielectric-center. The dielectric is foam.

>This stuff looks like it might have really low loss for UHF.  
>Does anyone know if this is a standard cable type? It is 75  
>ohms? Are connectors available? Perhaps regular N connectors  
>for RG-8 might fit it? If I knew anyone who worked at the  
>cable company, I would ask them.

>--

---

>-----  
>Doug Braun      Intel Israel, Ltd.      M/S: IDC1-41  
>                  Tel: 011-972-4-655069    dbraun@inside.intel.com

People often confuse shielding with low loss. I don't know what particular cable you have found but would be surprised if the loss figures aren't beatable elsewhere. However, the shielding properties of that cable should be hard to beat.

Gary

---

Date: 26 Oct 1993 08:58:49 -0700  
From: elroy.jpl.nasa.gov!usc!cs.utexas.edu!asuvax!chnews!ornews.intel.com!  
ornews.intel.com!not-for-mail@ames.arpa  
To: ham-ant@ucsd.edu

References <dcameron.751568644@unixg.ubc.ca>, <2ah9ss\$kvm@cville-srv.wam.umd.edu>,  
<2ain89\$kpl@crcnis1.unl.edu>nTEL  
Subject : Re: Larsen 2M 5/8 mobile

In article <2ain89\$kpl@crcnis1.unl.edu> mcduffle@unlinfo.unl.edu (Gary McDuffie Sr) writes:

>

>Be careful about "sanding off the rust". Remember, part of what makes

>a Kulrod Kul is the plating that you could take off in the process.

>Polish it up a little, but don't cut through the surface.

>

As I remember, the Larsen propaganda says there is a layer of copper under the "coating" (chrome or stainless?) and steel under that. Since the skin effect is extremely thin and the copper is under the "coating", I don't see how it does any good. If your antenna is not Kul (that's pronounced Cool in Swedish according to Larsen) then it must be pretty lossy.

I think the black Larsens are better since the copper is under the non-conducting black stuff. You definitely want to sand or scrape off the black stuff after trimming, of course.

My experiences with an 8 foot stainless whip vs. the Big Stick which is copper wire spiraled up an 8 foot fiberglass rod prove to me that steel is no good for antennas.

--

zardoz@ornews.intel.com WA7LDV

-----  
Date: 26 Oct 93 17:09:49 GMT

From: ogicse!emory!kd4nc!ke4zv!gary@network.ucsd.edu

To: ham-ant@ucsd.edu

References <1993Oct22.165908.10180@TorreyPinesCA.ncr.com>,  
<1993Oct23.154349.28417@ke4zv.atl.ga.us>,  
<1993Oct25.195604.11343@TorreyPinesCA.ncr.com>

Reply-To : gary@ke4zv.UUCP (Gary Coffman)

Subject : Re: SWR measurements are too good!

In article <1993Oct25.195604.11343@TorreyPinesCA.ncr.com>

kevin@TorreyPinesCA.ncr.com (Kevin Sanders) writes:

>In article <1993Oct23.154349.28417@ke4zv.atl.ga.us> gary@ke4zv.UUCP (Gary Coffman) writes:

>>

>>I think what you're going to find is that your two foot jumper is  
>>\*defective\*. It should not read 1.5:1 with the end open circuited.

>>It should read 20:1 or higher. Your Yagi should have a 2:1 bandwidth  
>>of about 5 MHz, and should show a pronounced and fairly broad dip

>>about 2 MHz wide.

>>

>>Gary  
>>  
>  
>Well, I guess I must admit I cheesed out on the jumper--it is one of those  
>Rat Shack pieces of coax with the crimped-on PL259s. However my readings  
Arrrrgh! You might as well be using garden hose. :-)

>were consistent - my meter is one of those bird-type military meters. The  
>power measured in the reverse direction was extremely low on the 10-watt  
>scale, about 1/4 watt with the antenna connected. Disconnecting the antenna  
>increased this to about 1/2 watt. Forward power with the antenna connected  
>measured 5 1/2 watts, which is over 1/2 scale. I didn't measure forward  
>power with the antenna disconnected.

Well then you don't know the SWR. The radio could have been going into  
SWR foldback with the jumper open circuited. (I doubt it with 100 feet  
of RS dummy load between the radio and the meter, but you don't \*know\*.)

>Reversing the coax connections on the meter and rotating the slug gives the  
>same results.

That just shows the meter is performing normally. I good thing to know.

>I did not measure the extent of the SWR dip in the frequency domain, only  
>physically along the length of the gamma match. The extremely narrow physical  
>length of the dip may or may not correspond to the antenna bandwidth--is it  
>possible that the pieces of #8 copper wire I used for a shorting "bar", which  
>contact the antenna element in an extremely narrow region rather than  
>a wide region such as a flexible strap would provide, are the cause of the  
>narrow dip?

Perhaps, but it isn't the physical dimension we are concerned with here.  
It's the frequency domain where the SWR curve is relevant. Once you find  
the physical point that corresponds to the dip being in the right place  
in the frequency domain, you can bond it in place and forget it. The width  
of the physical connection should not matter much in the frequency domain.

Gary

--  
Gary Coffman KE4ZV | "If 10% is good enough | gatech!wa4mei!ke4zv!gary  
Destructive Testing Systems | for Jesus, it's good | uunet!rsiatl!ke4zv!gary  
534 Shannon Way | enough for Uncle Sam." | emory!kd4nc!ke4zv!gary  
Lawrenceville, GA 30244 | -Ray Stevens |

-----  
Date: 25 Oct 1993 15:44:17 -0400

From: swrinde!cs.utexas.edu!sdd.hp.com!spool.mu.edu!nigel.msen.com!heifetz!rotag!  
serve.tech.mis.cfc.com!serve.tech.mis.cfc.com!not-for-mail@network.ucsd.edu  
To: ham-ant@ucsd.edu

References <1993Oct20.181229.719@TorreyPinesCA.ncr.com>,   
<CF9910.EEA@cunews.carleton.ca>, <2a91mr\$6p8@crchh941.bnR.ca>s.cfc  
Subject : Re: SWR measurements are too good!

In article <2a91mr\$6p8@crchh941.bnR.ca> kharker@bnR.ca (Kenneth E. Harker) writes:  
>

>Also, make sure you have the antenna and tx cables going to the right  
>posts on the meter. I accidentally got them mixed up on my MFJ VHF SWR  
>meter once when I was building an antenna, and everything was 1.1:1.

>--

>=====

>Kenneth E. Harker                    BNR                    "Any opinions expressed  
> kharker@bnR.ca                    Richardson, Texas, USA            are solely mine and do  
>                                        (214) 684-5115                    not represent BNR"

>=====

An FM station here that I have contact with from time to time (WOMC)  
recently replaced their antenna and feedline (ERI and 5 inch heliax).  
When the riggers were done and they fired it all up, for 80,000 watts  
out of the transmitter, less than 1 watt reflected. They thought  
something was broke in their watt meter until they got a smaller slug  
to check the reflected with. Probably 500 ft of line.

joel  
wb8rhg

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End of Ham-Ant Digest V93 #91

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